



# CHEMICAL EMERGENCY PREVENTION & PLANNING

*Newsletter*


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EPA Region 10

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### CHEMICAL EMERGENCY PREVENTION & PLANNING *Newsletter*

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[http://www.epa.gov/r10earth/  
112r.htm](http://www.epa.gov/r10earth/112r.htm)

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West Pharmaceutical Services plant in Kinston, North Carolina, Jan. 2003 (Source: Chemical Safety Board)

## Lessons from RMP Five-Year Accident Data

### *Using Accident Data to Improve Your Accident Prevention Program*

The purpose of the Clean Air Act Risk Management Program regulation is to reduce the likelihood of airborne chemical releases that could harm the public, and mitigate the consequences of releases that do occur. The Clean Air Act requires that RMP facilities must report a five-year accident history that includes all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage.

In Region 10, five-year accidents have been quite costly in terms of property damage and injuries to workers:

- At least one worker on average is injured in each accident.
- At least \$2,000,000 on average in property damage per accident (when property damage occurred).

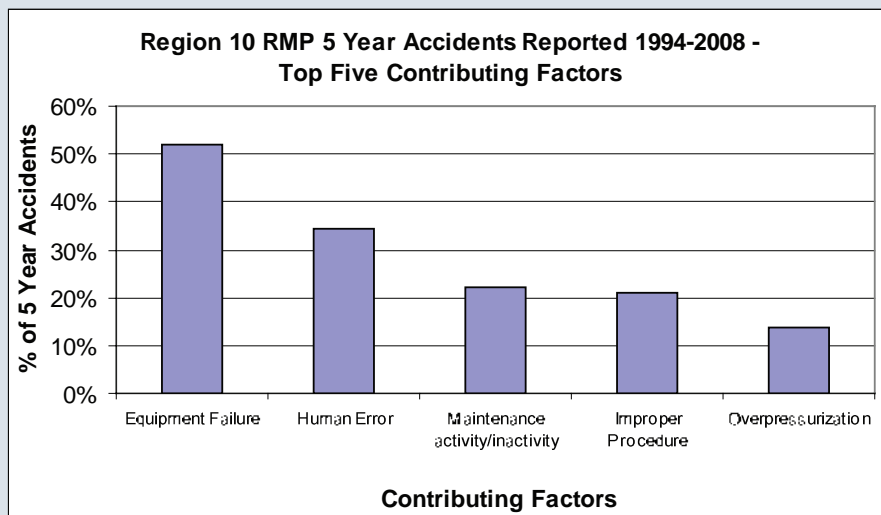
Investigators use accident data to understand the most common causes of accidents. With a more clear

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## Lessons from RMP Five-Year Accident Data (continued)

understanding of accident causes, we can more effectively prevent accidents from occurring. The graph below illustrates the top five “contributing factors” of 139 five-year accidents in Region 10 between 1994 and 2008. These top five factors include equipment failure, human error, maintenance activity/inactivity, improper procedures, and overpressurization (note: one accident can have multiple “contributing factors”).



*Source: USEPA Chemical Emergency Prevention and Preparedness Office. RMP\*Review version 4. Data retrieved for Region 10 on August 11, 2009*

The data shown in the graph above illustrate areas that should be given considerable emphasis in your accident prevention program. “Equipment failure” and “human error” are seldom the “root cause” of a release. (For example, equipment may fail because of poor maintenance and human errors may be the result of inadequate training and/or operating procedures). Accident investigations have discovered that the root causes of accidents are most often found in inadequate or out-of-date training, maintenance procedures, and operating procedures. The best way to prevent accidents is to integrate accident prevention into the culture of your company. Each and every worker should know their daily role in accident prevention and emergency response.

## Tips for integrating accident prevention into the culture of your facility

- **Employee Participation:** Create a systematic method of involving each employee involved in a covered process in the development of operating procedures, safety programs, and process hazards analysis. If employees are able to participate in the development of an accident prevention program, they will better understand their role and be better able to help identify risks.
- **Operating Procedures:** Develop, implement and regularly review comprehensive operating procedures for each covered process. Detailed operating procedures will help your employees know what to do to prevent accidents in any situation. Make sure that all employees are trained on operating procedures and after the training, the most current procedures are

readily accessible. Annually review and certify operating procedures to verify that the procedures are up-to-date.

- **Training:** Develop a training program of initial and refresher trainings for each employee and contractor and follow it. Training topics should include safety and health hazards, emergency operations (including shutdown), safe work practices, and operating procedures. Document that the training occurred and that each employee and contractor has understood each training session. Additional training should be planned when a significant change occurs to a covered process. Prior to engaging a contractor, review their safety performance and periodically evaluate their safety performance during the duration of the contract.
- **Mechanical Integrity:** Plan regular and ad hoc plant tours to look for mechanical integrity problems such as corroded equipment, piping and valves, inadequate piping support, and small drips or wet spots. Assure that all pressure vessels in your plant, including portable tanks and tanks which are a part of “packaged systems” (for example, compressors, refrigeration units, compressed air systems, etc.), are included in the plant mechanical integrity inspection program and are being inspected by qualified pressure vessel inspectors. If you see or hear something that concerns you, report it promptly and follow-up to make sure steps are taken to correct the deficiency.
- **Maintenance and Repairs:** Understand the equipment inspection and maintenance program in your plant, and understand your role in ensuring that all activities are completed as required. Make sure that all equipment repairs follow all required standards, and meet the original design specifications for the equipment.

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- **Process Hazard Analysis:** Bring together a group of employees with expertise in engineering and process operations to identify, evaluate and ultimately control all hazards involved in your process. Your team should systematically identify any hazards, engineering and administrative controls applicable to the hazard, consequences of failure of controls, hazards related to human factors and facility siting, and health and safety impacts of control failure. Recommendations from the team should be resolved in a timely manner and each action taken should be documented. The process hazard analysis should be conducted at least every five years and all copies should be retained for the life of the process.
- **Documentation:** Document all of the work that you do. Clean records enable quicker response by emergency personnel, support more effective training, and strengthen accident prevention efforts. Don't throw out your old incident reports, process hazards analysis documents or compliance audits. Read them again and remember the lessons. We can learn a lot from things that happened a long time ago.

#### For More Information:

- Chemical Safety Board (<http://www.chemsafety.gov/>)
- Center for Chemical Process Safety (<http://www.aiche.org/CCPS/Publications/Beacon/index.aspx>)
- EPA's Emergency Management Programs (<http://www.epa.gov/emergencies/index.htm>)
- EPA's General Guidance on Risk Management Programs for Chemical Accident Prevention ([http://www.epa.gov/emergencies/content/rmp/rmp\\_guidance.htm](http://www.epa.gov/emergencies/content/rmp/rmp_guidance.htm))

*Some of the content in this section is taken from Center for Chemical Process Safety (CCPS)'s Process Safety Beacon. To read the Process Safety Beacon, visit: <http://www.aiche.org/CCPS/Publications/Beacon/index.aspx>*

# RMP Compliance Audit: Who, What, When

A key challenge that facilities face when maintaining their EPA Risk Management Plan is their failure to conduct Prevention Program compliance audits. Accident prevention programs are required for both Program 2 and Program 3 Risk Management Plans. Both programs require a compliance audit of their prevention program at least once every three years.

There are several ways to conduct a compliance audit. An effective tool to help you through the process is to follow the EPA inspector's checklist as a guide. These checklists are the very same checklists utilized by the EPA inspectors during evaluations of your program and they are readily available on the EPA Region 10 RMP website.

If you are a Program 3 facility, you will need to obtain a copy of the EPA inspector's [Program 3 checklist](#). The areas to be addressed in the checklist are contained in Section "C" titled "Prevention Program". The "Prevention Program" sub-headings include: safety information, process hazard analysis, operating procedures, training, mechanical integrity, management of change, prestart-up safety review, compliance audits and incident investigation. All of the items under each of the sub-headings should be properly addressed during the audit. The checklist

can be used for both guidance and partial documentation of the audit findings. Also, be sure to document the names of the individuals conducting the audit and document all audit findings in an audit report. Last but not least, you will need to promptly determine and document an appropriate response to each finding and document that corrective actions have been taken.

If you are a Program 2 facility you will need to obtain a [Program 2 checklist](#) and also address the items in "Section C". The checklist is similar to a Program 3 checklist but is not as extensive. Section C identifies the following areas to review: safety information, hazard review, operating procedures, training, maintenance, compliance audits and incident investigation. The checklist can guide you through the requirements for your compliance audit. As with the Program 3 requirements, you will need to document the names of the individuals that conducted the audit, the findings and the actions taken to remediate each deficiency.

Finally, remember that you must retain the copies of the two latest compliance audits and the documentation of the actions taken to address issues identified during the audit.

# MARPLOT UPDATE

MARPLOT is a mapping tool that may be used to fulfill the EPA Risk Management Program requirements (40 CFR Part 68.30) "Defining offsite impacts—population".

A new version of MARPLOT is available at: <http://www.epa.gov/emergencies/content/cameo/marplot.htm>.

## MARPLOT 4.1 Upgrade:

- Changed the default satellite basemap to a new color aerial photos layer with better coverage throughout the United States.
- Added support for Google's KML file type: export ALOHA objects to a KML file and add KML files as basemap layers.
- Changed the map projection so that circles are no longer stretched horizontally.
- Added ability to get a street address from the click point location (using Google).
- Fixed minor bugs.

If you've already upgraded to MARPLOT 4.0 or 4.0.1, you should download and run the MARPLOT 4.1 upgrade tool to install the new fixes to your program. You won't have to reload any of your data or layers.

If you're using a version of MARPLOT prior to 4.0, then you should download the new MARPLOT 4.1 installer and follow the instructions in the guidance document (provided on the download page) to ensure that you don't lose your current maps and data.

# Toxic Release Inventory (TRI) Data Online

On August 18, 2009, EPA made available the preliminary reporting data from its annual electronic Facility Data Release (eFDR) providing 'raw' 2008 TRI data via data files posted to the TRI Web site ([www.epa.gov/tri](http://www.epa.gov/tri)). The August launch will provide public access to facility specific TRI data and information a month earlier than in past years.

The early release of raw data to the public has been requested by TRI stakeholders for several years and is supported by the statutory purpose of TRI and the recent release of [www.Data.Gov](http://www.Data.Gov). This is a government-wide website designed to improve transparency and allow the public to obtain raw data in a format useful for their own purposes. Transparency and increased collaboration are key Administration priorities.

The TRI Program hopes that early data availability will encourage TRI data users to take an active role in examining the preliminary state and national data files while EPA continues to conduct

internal data quality checks and analyses. Updates will be posted on the TRI website as processing becomes more complete, culminating in the final data release with completed analyses and trend information. The final (public) data release (PDR) is slated to take place in December 2009 – the earliest release so far.

## No Changes to Reporting Process for Facilities

These changes will not affect the reporting process or criteria. Facilities will still be able to make revisions to data should the need arise. The normal Revision or Withdrawal process will continue as described in the TRI Reporting Forms and Instructions:

[http://www.epa.gov/tri/report/rfi/TRI\\_RFI\\_RY2008.pdf](http://www.epa.gov/tri/report/rfi/TRI_RFI_RY2008.pdf)

Questions: Please contact the TRI-EPCRA Hotline at 1-800-424-9346 or Brook Madrone, Region 10 EPCRA 313 TRI Program Manager, (206) 553-4016 or [Madrone.Brook@epa.gov](mailto:Madrone.Brook@epa.gov).

*This newsletter provides information on the EPA Risk Management Program, EPCRA, SPCC/FRP and other issues relating to Accidental Release Prevention Requirements. The information should be used as a reference tool, not as a definitive source of compliance information. Compliance regulations are published in 40 CFR Part 68 for CAA section 112(r) Risk Management Program, 40 CFR Part 355/370 for EPCRA, and 40 CFR Part 112 for SPCC/FRP.*